WHAT IS CLAIMED:

1. A mold with integral screen comprising a body formed of a material having a surface, said body having a grid-like pattern of vacuum holes extending through the material and opening through said surface and permitting a vacuum to be supplied to said surface and a screen overlying said surface, said screen and said body being formed of the same material as the body and being integral.

2. A mold as in Claim 1 wherein said material forming said body and said screen is a sintered material.

3. A mold as in Claim 2 wherein said grid-like pattern is formed by a plurality of struts extending at angles with respect to each other and providing the vacuum holes extending to the screen.

4. A mold as in Claim 3 wherein the screen is formed of a plurality of spaced-apart parallel struts extending at angles with respect to each other and defining holes therein in communication with the vacuum holes of the grid-like pattern of the body.

5. A mold as in Claim 1 wherein said screen has a complex surface.

6. A mold as in Claim 1 wherein said screen has an exterior surface and further including a release coating formed on the exterior surface.

7. A mold as in Claim 6 wherein said release coating is formed of Xylan.

8. A mold as in Claim 1 wherein said vacuum holes in said grid-like pattern have substantially the same length so

as to provide a substantially uniform vacuum to the screen when a vacuum is applied to the mold.

9. A mold as in Claim 1 wherein said mold is formed of a material which is capable of withstanding temperatures in excess of 300°F.

10. A mold as in Claim 7 wherein said release coating is a heat resistant coating capable of withstanding temperatures of 430°F.

11. Apparatus for producing molded pulp products by the use of first and second mating molds being formed of a porous material and capable of withstanding temperatures in excess of 300°F, a first manifold for carrying the first mold and means for moving the first manifold and the first mold carried thereby into a fiber slurry for forming the molded part of molded pulp, means for applying a vacuum to the first manifold to cause a vacuum to be applied to the first mold when the first mold is immersed in the fiber slurry, a second transfer manifold mounting the second mold, means supplying heat to the second transfer manifold and the second mold, means for moving the second transfer manifold and the first manifold to bring the first and second molds into engagement with each other, means for maintaining a vacuum on the second transfer manifold and the first manifold, means for applying heat to the second transfer manifold to cause drying of the molded pulp carried by the first mold to provide the molded part, means for causing relative movement between the second transfer manifold and the first manifold and means for at substantially the same time supplying compressed air to the first manifold to cause the molded part to be separated from the first mold and to move with the second transfer mold, and means for thereafter releasing the vacuum on the second transfer manifold to permit separation of the molded part carried by the second transfer mold.

12. Apparatus as in Claim 11 wherein said means for moving the first manifold is capable of immersing the first mold repeatedly into the fiber slurry until a sufficient thickness of fibers has been formed on the first mold for the molded part.

13. A method for forming a mold with an integral screen, generating by computer a latticework providing a mold surface having a plurality of openings therein and grid-like support means underlying and supporting the latticework and providing a plurality of passages extending upwardly to and in communication with the openings in the screen, converting the computer program into a stereolithographic program for manufacturing the mold, latticework and the grid-like support and means utilizing the stereolithographic program to form the latticework and the grid-like support means from the same material.

14. A method as in Claim 13 further including the step of providing a powder of a plastic material and sintering the powdered material utilizing the stereolithographic program.

15. A method for producing molded parts from a fiber slurry by the use of first and second mating porous molds, moving the first mold into a fiber slurry and supplying a vacuum to the first mold to cause fibers from the fiber slurry to form onto the first mold to a desired thickness, heating the second mold, mating the first and second molds and supplying a vacuum to the first and second molds during mating of the first and second molds and while heating is supplied to the second mold to cause solidification and drying of the fibers carried by the first mold until the fibers on the first mold are at least self-supporting to provide a molded part, ejecting the molded part formed by the fibers so that the molded part will travel with the second mold as the second mold is moved, moving the second mold and releasing the vacuum on the second mold to permit the molded part to be separated from the second mold.

16. A method as in Claim 15 wherein compressed air is utilized for ejecting the molded part from the first mold.